BROOKHAVEN NATIONAL LABORATORY

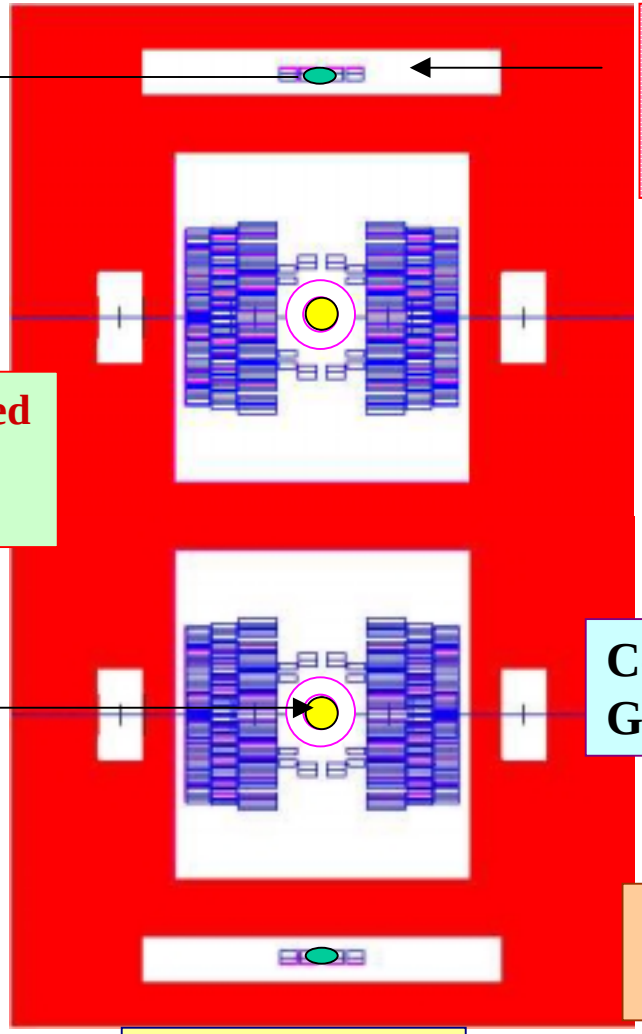
Superconducting Magnet Division

A Common Coil Magnet System for VLHC

A Solution to Persistent Current Problem

May eliminate the High Energy Booster (HEB)

A 4-in-1 magnet for a 2-in-1 machine



Inject in the iron dominated aperture at low field and accelerate to medium field

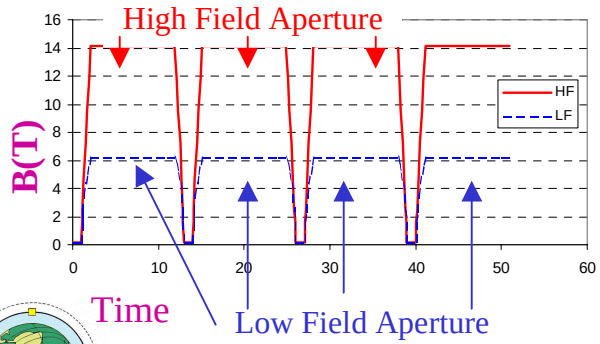
Injection at low field in iron dominated aperture should solve the large persistent current problem associated with Nb3Sn

Transfer to conductor dominated aperture at medium field and then accelerate to high field

Conductor dominated aperture
Good at high field (1.5-15T)

Iron dominated aperture
Good at low field (0.1-1.5T)

Field profile with time



Compact size

AP issues? Compare with the Low Field Design.